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of a steep wall and there was one pocket of a lenticular form containing the mineral, with a cross-section of about 3 by 10 inches. A few feet away there was an imbedded layer of the material showing at the surface for a distance of about eight feet. This layer was sloping down at an angle of about 10 degrees, measuring at the upper end about $1\frac{1}{2}$ inches and thickening out toward its lower end to about 3 inches. At a deposit in the Paradox Valley, Colorado, the same mineral occurred in small pockets imbedded in and lying between the carnotite and high-grade vanadium sandstone. At Green River, Utah, there was a considerable amount of associated gypsum.

The cracks, interstices, and part of the exposed surface of the mineral are partly coated with carnotite. The carnotite can be easily removed from the black mineral by sliming the crushed carbonaceous material. The black mineral on being dried shows a high activity, somewhat higher than would be expected from the uranium content.

The mineral burns with a feeble flame and on ignition leaves a light brown ash.

As already stated, the mineral is intimately associated with carnotite, so much so that it would appear that the carnotite may be a secondary transformation product of this mineral. The structure is massive and brittle; the luster metallic, dull to shiny and sub-metallic; the color black; fracture uneven; specific gravity 1.972 to 1.984; hardness 3 to 3.2; and streak black to brownish black.

A typical preliminary analysis of the mineral made by C. F. Whittemore, of the Denver office of the Bureau of Mines, after the carnotite had been removed and its absence confirmed by careful examination with a microscope is as follows:

	Per Cent.
Water	7.45
Carbonaceous material	74.30
Silica07
V_2O_5	1.62
U_3O_8	9.43
Fe_2O_3	3.29
Al_2O_3	1.17

Several analyses appear to show that the uranium content is fairly constant, but the

vanadium varies, one result being as low as 0.38 per cent. This would seem to indicate that a part, if not all, of the vanadium is in the form of roscoelite or some similar mineral which was not completely removed by the mechanical treatment.

Further work is being done on this mineral, which will be published later, and we desire to reserve priority rights for the completion of the work, and the naming of the mineral.

KARL L. KITHIL

U. S. BUREAU OF MINES

SCIENTIFIC BOOKS

School Hygiene. By FLETCHER B. DRESSLAR, Specialist in School Hygiene, United States Bureau of Education. The Macmillan Company. 1913. Pp. 369.

Educational hygiene has four leading and interrelated divisions: (1) the hygiene of physical and mental growth; (2) health and medical supervision of schools; (3) the hygiene of instruction, and (4) the hygiene of the school plant.

Dr. Dresslar's book deals mainly with the last division. Of the twenty-six chapters, eighteen deal chiefly with the school plant, eight with problems relating to the hygiene of growth, two with the hygiene of instruction, and one with medical inspection.

According to the preface, "It is the purpose of this book to set forth in a simple and untechnical way some of the hygienic requirements of school life, and to suggest, whenever it seems necessary, how these requirements may be put into practise. No attempt has been made to treat any phase of the subject exhaustively. The purpose has been to select the most important topics, and to deal with them in a manner as simple as is consistent with the truth. It has not been written for the specialists in school hygiene, but for busy teachers."

The volume is a much-needed and extremely valuable addition to our literature on school hygiene. The author's extensive first-hand acquaintance with the problems of schoolhouse construction and equipment adds very greatly

to the practical value of the book. Such topics as location and construction of school buildings, schoolhouse lighting, school desks, school baths, water supply, drinking fountains, toilet arrangements, ventilation, heating, schoolroom cleaning, janitor service, disinfectants, etc., have here the best treatment that they have received in any English text. In general, the book presents just those facts about school buildings which every person needs to know who has anything to do with their construction or care, and it is certain to become an indispensable handbook for school officers of every class.

It would be unfair to criticize the author for the brevity with which he treats the problems relating to the hygiene of growth, school medical inspection and the hygiene of instruction. The field of school hygiene has become too broad to permit adequate treatment of all the above-named divisions in a single volume. The division chosen for treatment in this book is one on which America had produced no first-class text in more than a decade, and the author has done his work well. The chapters on location and construction of school buildings, schoolhouse lighting, school desks, heating and janitor service are especially valuable.

Here and there the critical reader will find statements with which he may be inclined to disagree. Many will probably think the author's position on some of the problems of ventilation somewhat conservative, particularly in the scant consideration which is given to the experiments by Leonard Hill and others on the relative effects of humidity, temperature, movements and chemical composition of the air on physical efficiency. In all of these newer experiments the author declines to see anything revolutionary as regards the practical problems of ventilation, and the three main references cited on this chapter bear the dates 1893, 1896 and 1897, respectively.

Among the statements open to question are the following: "The results of careful examinations made in all progressive countries prove conclusively that the school conditions are responsible for a large part of the near-sightedness prevalent among children of the higher

school grades"; "myopia is not often, if ever, inherited," etc. (p. 221). Kotelmann is quoted approvingly to the effect that myopia is never found among primitive races. In regard to stuttering, the author states that "many, perhaps most, cases find an immediate cause in imitation" (p. 265). In speaking of the rapid progress made by Filipino school children in learning a foreign language the author states (p. 296) that it would be "utterly impossible to make the same progress with ignorant adults." That myopia is school-caused and never hereditary, that stuttering usually results from imitation, that children have greater learning capacity than adults are views which tradition has long sanctioned, but which recent investigations have thrown much doubt upon.

Certain other passages are, perhaps, open to question in the same way, and objection might be taken in a few cases to the author's selection of references. But to dwell on such minor points of criticism would be unfair, so carefully has the work in general been performed. The treatment is authoritative and comprehensive, yet the style is easy, stimulating and interesting. The book will long remain a standard treatise, especially on the construction and equipment of school buildings.

LEWIS M. TERMAN

The Geology of Soils and Substrata with Special Reference to Agriculture, Estates and Sanitation. By HORACE B. WOODWARD, F.R.S. London, Edward Arnold; New York, Longmans, Green & Co. 1913.

The intent of the writer of this work, as noted in his preface, is "to provide such information relating to the land surface as will be useful to students and teachers of agriculture, to those occupied in the management of estates and farms, or in sanitary engineering works." To do all this within a small octavo volume of but 366 pages is no small task and one that would be well-nigh if not quite impossible for any but a restricted area such as is comprised within the limits of Great Britain.